IN THE ABSTRACT:

Please substitute the Abstract as provided below, for the Abstract currently in the present application.

The invention is directed to a catalyst having activity under the irradiation of a visible light, the catalyst being an oxide semiconductor such as an anatase type titanium dioxide, having stable oxygen defects. A method for producing a catalyst having activity under the irradiation of a visible light which comprises treating an oxide semiconductor with hydrogen plasma or with a plasma of a rare gas element, comprising performing the treatment in a state substantially free from the intrusion of air into the treatment system is also provided. An article comprising a base material having the catalyst above provided on the surface thereof and a method for decomposing a substance, comprising bringing an object to be decomposed into contact with the catalyst above under the irradiation of a light containing at least a visible radiation are disclosed. A novel photocatalyst which enables use of a visible radiation is provided, as well as a method utilizing the photocatalyst for removing various substances containing an organic matter or bacteria by photodecomposition.

IN THE CLAIMS:

Please substitute claims 40-47, 49-59, 61-64, 71, 74 and 75 as provided below, for claims 40-47, 49-59, 61-64, 71, 74 and 75 currently in the present application. Please add new claims 80-87 in the present application.